Music Therapy

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Objectives

- Define Music Therapy in general, gaining basic understanding of training and elements of interventions.
- Identify how Music Therapy is beneficial in palliative and hospice care patients.
- Identify how Music Therapy is beneficial in dementia populations
- Provide examples of Music Therapy interventions to strengthen understanding

Music Therapy

What it is, what it isn't, and how to make it happen.

What is Music Therapy (MT)?

(American Music Therapy Association, 2005)

"Music Therapy is the clinical & evidence-based use of music interventions to accomplish individualized goals within a therapeutic relationship by a credentialed professional who has completed an approved music therapy program."

What it is…and what it isn't

Music-based intervention	Music therapy	Music medicine	Other music-based interventions
Processes	Systematic use of various methods of tailored music experiences within a therapeutic relationship to promote health	Listening to pre-recorded music for health-promoting goals	Other uses of music activities for health-promoting or recreationa goals
Practitioner	Provided by credentialed music therapists	Provided by healthcare professionals	Provided by musicians and/or healthcare professionals

Figure 1 Different types of music-based interventions in healthcare and medical settings. The figure is based on *Stegemann et al* "Music therapy and other music-based interventions in paediatric healthcare: an overview".

Bartoni M, et al. 2025

What it is…and what it isn't

Music Therapy (MT)

- Active vs passive - patient participating vs listening
  - Active = leads to better outcomes
- Music in Medicine – listen to recorded/live music
  - Objective, well-being, playful
  - Not part of therapeutic process
- MT – actively involves pt, by music therapists
  - pt-professional relationship
  - Part of therapeutic process

Techniques further divided:

- Musical improvisation – explore aspects related to self & others
- Music & movement – connecting body expression & environment
- Song/singing - physical & social
- Musical listening – emotion, concentration, memory
- Rhythm & percussion – coordination, motivation
- Receptive, creative/recreative

Who can be a music therapist?

- Bachelor's Degree (or higher) in MT
  - Musical foundations, clinical foundations, and music therapy foundations
  - Completion of 1200 clinical hrs in internship
- Graduate-Equivalency Programs
- Board Certification Credentials
- State-Specific Requirements

cbmt
certification board
for music therapists

Who is it for?

Social Health

- Military/Veterans
- Caregivers/support

Developmental

- Autisim Spectrum Disorder
- Special Education

Symptoms

- Pain Management
- Hospice

Neurologic

- Acquired Brain Injury
- Dementia/Parkinsonism

Psychiatric

- Addiction Treatment/SUD
- Mental Health (A/D)

Pediatric

- NICU/Pediatric Medical
- Child/Adolescent Behavior

Treatment Process

According to the AMTA standards of practice

Evidenced-Based Practice

Best available research

Music therapist's expertise

Client needs/values/preferences

Music *in* therapy vs. Music *as* therapy

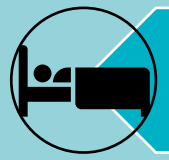
Example – Parkinsonism
(music *in* therapy)

https://youtu.be/uDjQ7lKmH3s?si=_IbuSguOA6FjEaBf

Music Therapy in Hospice

Common Goals

Cognitive Engagement



Relaxation

Spiritual Support

Decreased Anxiety

Life Review & Reminiscence

MT benefits in Hospice

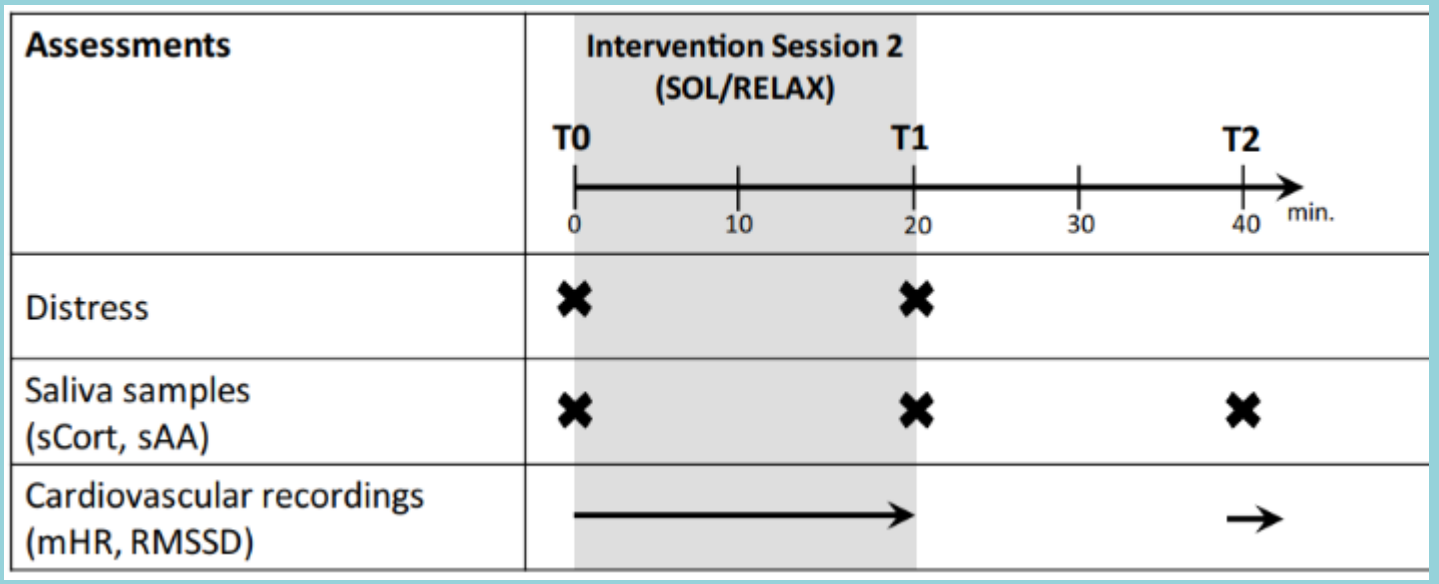
- Reduces pt symptom burden
- Enhances pt & caregiver QOL
- High reports of satisfaction
- Short-term benefits, longer-term not clear

Symptoms

- Pain
- Dyspnea
- Anxiety/distress

Quality of Life

- Emotional & Spiritual
- Social & Communication



Koehler F et al. 2022

Fig. 1 Timing of outcome assessments in intervention session 2. SOL "Song of Life" music therapy, RELAX relaxation intervention, T time point, sCort salivary cortisol, sAA salivary α-amylase, mHR mean heart rate, RMSSD root mean square of successive differences

Looking into psychoneuroendicrinological effects – mixed findings, needs further study.

- One study looking into palliative care patients: distress rating, salivary cortisol & a-amylase, heart rate variation & mean
- Reduced momentary distress, stronger in MT arm of RCT
- No difference in other outcomes
- Need optimal psychobiological measurement methods in this population

Other studies indicate, salivary biomarker assays confirm music improves mood states by reducing concentrations of cortisol.

Patient Case

- Pt. F, mid 80's
- In-patient at hospice house
- Goals addressed:
  - Music assisted relaxation
  - Emotional support/regulation
- Interventions:
  - Improvisational song writing
  - Guided visualization

Music Therapy in Dementia Populations

MT benefits in dementia

- Improves agitation behavior
  - Without risks like Rx Tx
- Enhances well-being/QOL
  - Boosts self-esteem (self-identity)
  - Improves anxiety/depression
- Improves global cognition
  - Autobiographical memory
  - executive functioning & language
- Early involvement
  - Slows disease progression

Passive MT - Reminiscence

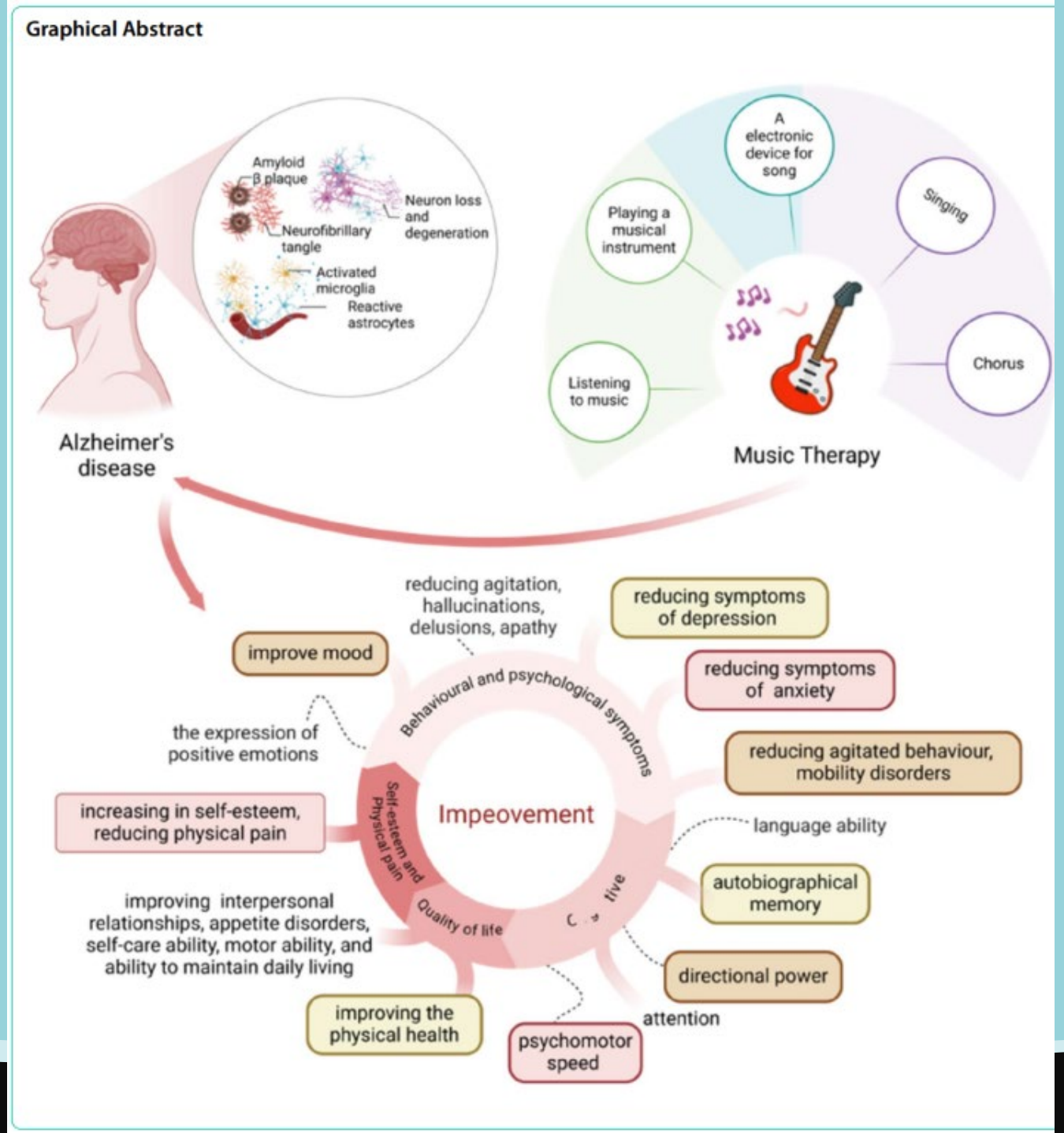
- Emotion & Reflection

Active MT – participant/motion

- Socialization & Expression
- Best outcomes seen

Continuous MT

- Long-term effects (MMSE)
- More effective combined
- Min: 12 wks, 16 sessions, 8hrs



Wang J, et al. 2025

Dementia and music in the brain

- Brain derived neurotropic factor (BDNF) - neuroprotective & neurogenesis
  - Decreased levels in hippocampus & serum in AD
  - Animal studies indicate BDNF increases after music exposure. MT reduces depression, BDNF increases when depression is reduced

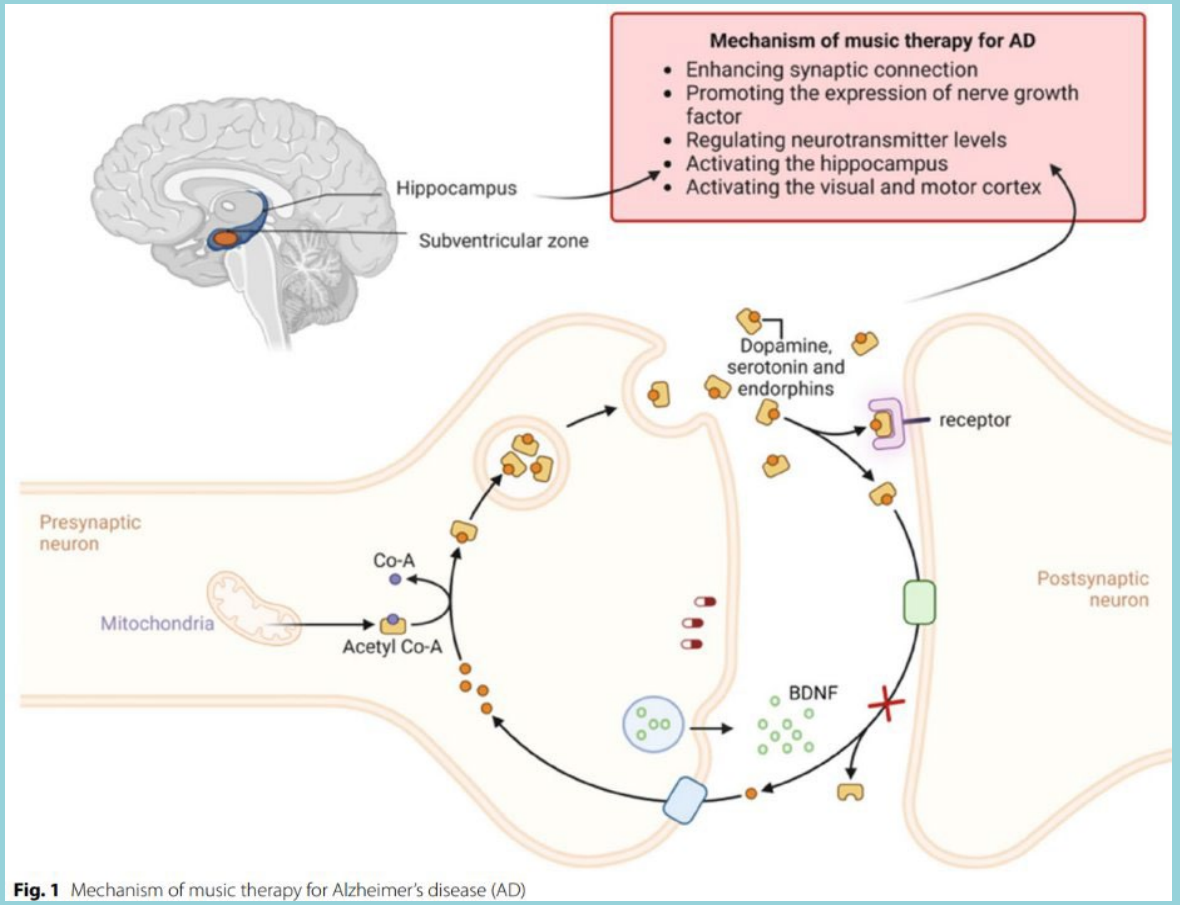
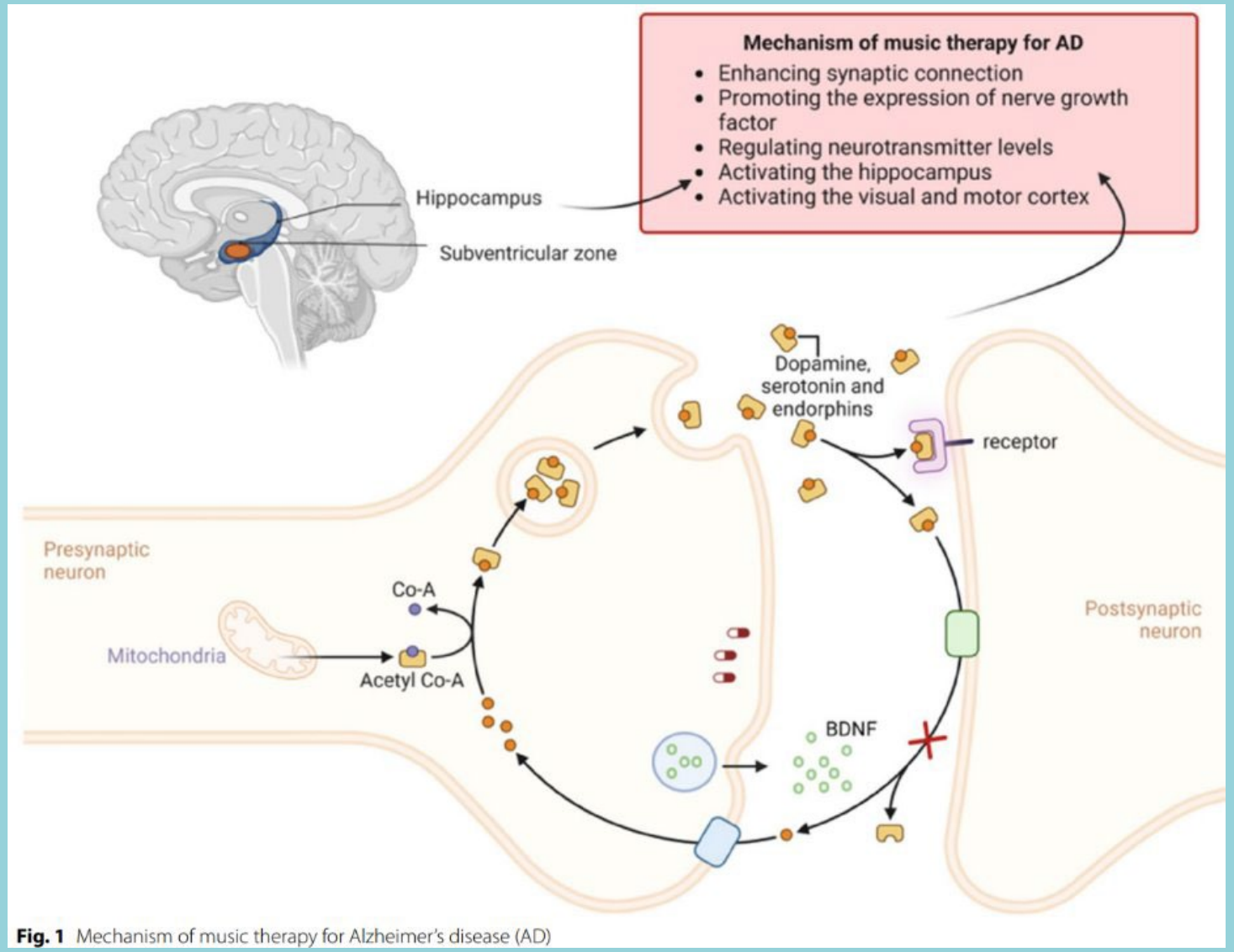


Fig. 1 Mechanism of music therapy for Alzheimer's disease (AD)

Wang J. 2025



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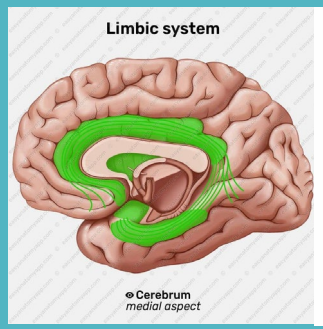
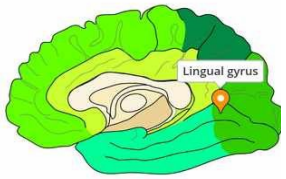
Wang J. 2025

Mesolimbic pathway

- Music activates dopamine reward system
  - Improves mood & maintains cognition
  - Situational memory





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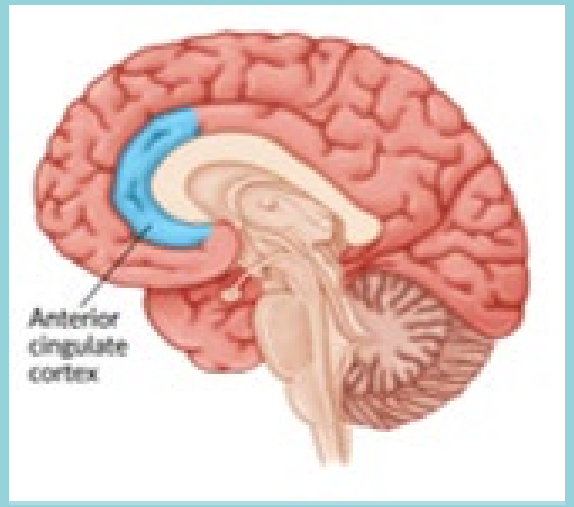

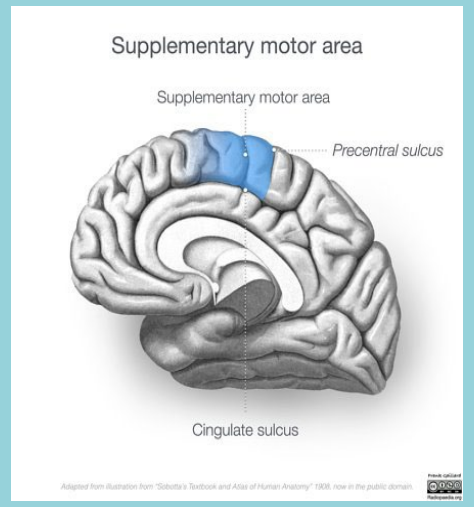

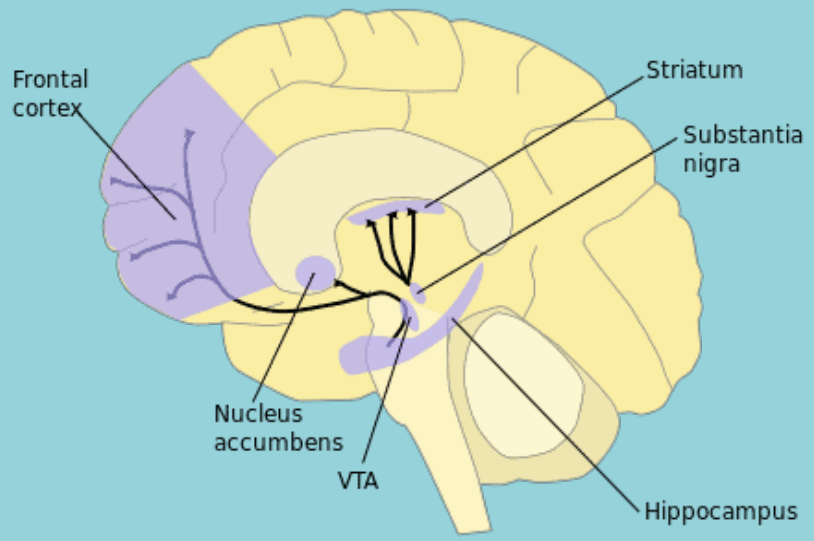

Anterior cingulate cortex (ACC) & pre-supplemental motor area (pre-SMA)

- Neural-encoding of music & part of reward system
  - Last to degenerate in AD
  - Preserving musical responsiveness

Substantia nigra-striatal pathway

- Simulation on PET with music exposure
  - Increases dopamine release
  - Improvements of aggressive behaviors

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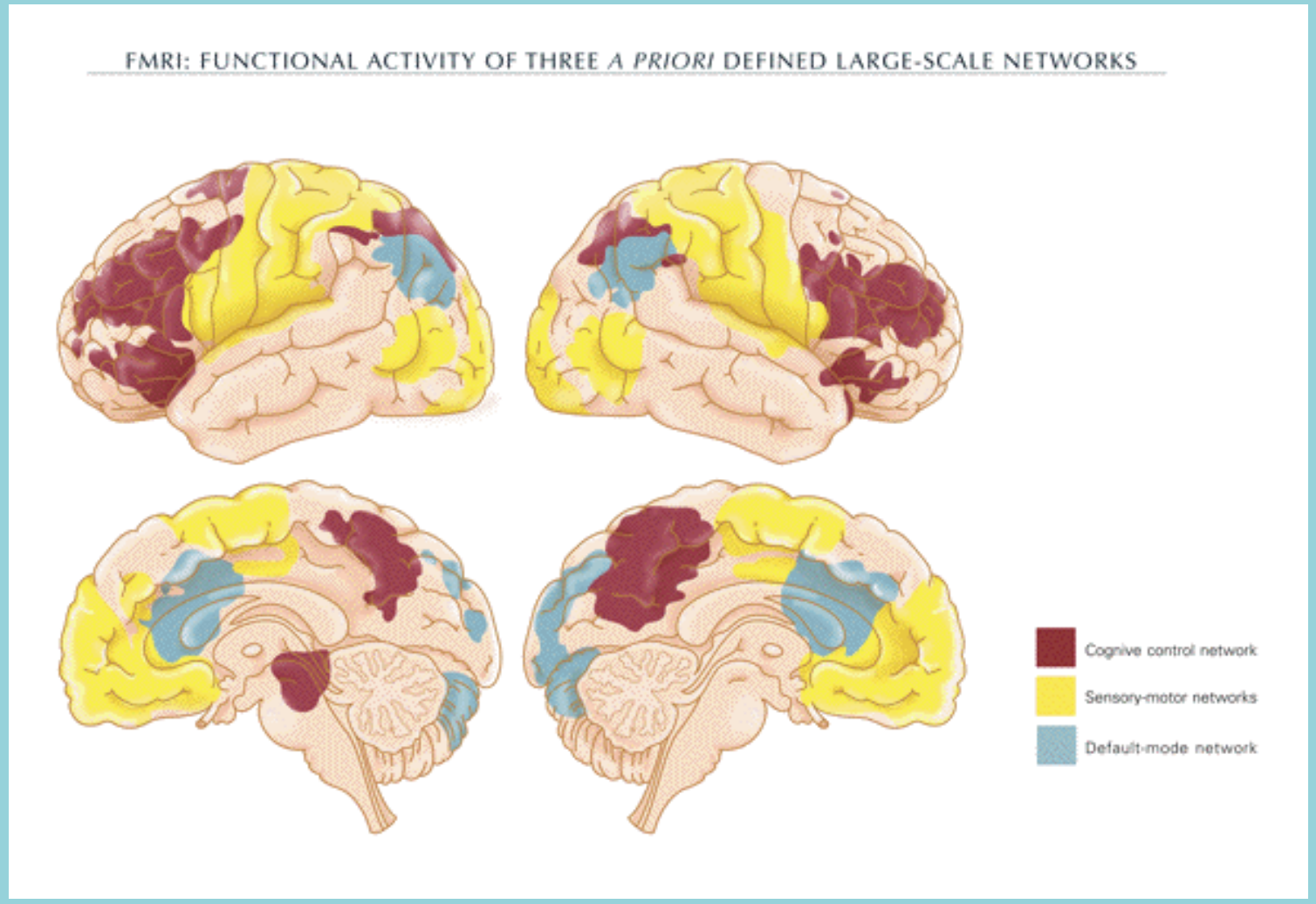

Default mode network (DMN)

- episodic memory, reflection, executive performance
  - Impaired in AD impacting memory & cognition
  - Primary sites for amyloid-B deposits
  - Activated when music is emotive
  - Retrieve & re-process autobiographical memories

https://baillement.com/image-quinte/dmn_1.gif

Potential to reduce AD risk?

- Decreasing risk – "requires active participation & cognitive engagement of lifestyle factors, which facilitates neural plasticity & neural scaffolding"
  - Suggests actively participating in musical training & therapy is more beneficial to brain than passive engagement
  - Physical exercise, cognitive enhancement, & learning are brain protective
    - All parts of music training & can be implemented as MT
  - Study of amateur musicians, extracurricular past-time (not a profession)
    - Long-term music making leads to younger appearing brains
    - Capitalizing on plasticity & protective effects of music making

Summary

- Music therapy (MT) - is the clinical & evidence-based use of **music interventions** to accomplish **individualized goals** within a therapeutic relationship by a **credentialed professional** who has completed an approved music therapy program
- MT has a variety of techniques for therapeutic interventions – flexible for patient specific situations and needs – with a favorable safety profile.
- MT helps hospice patients by reducing symptom burden and enhancing quality of life – improves caregiver quality of life and distress – short-term benefits are clear, longer-term benefits need further studies
- MT benefits dementia patients by improving agitation behavior, enhancing quality of life, and improving global cognition – early involvement slows disease progression and has potential to reduce risk of Alzheimer disease

Sources:

- https://www.musictherapy.org/
- Parkinsonism Video - https://youtu.be/uDjQ7lKmH3s?si=_IbuSguOA6FjEaBf

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